

## ABSTRACT OF THE DISCLOSURE

A field-emission electron source element includes a cathode substrate, an insulating layer that is formed on the cathode substrate and  
5 has an opening, a lead electrode formed on the insulating layer, and an emitter formed in the opening. A surface layer of an electron emitting region of the emitter is doped with at least one reducing element selected from the group consisting of hydrogen and carbon monoxide. Further, an image display apparatus including the above-mentioned field-emission  
10 electron source element is provided. This makes it possible to obtain not only a stable field-emission electron source element that does not cause a current drop even after a high current density operation for a long time but also a high-performance image display apparatus that can maintain a stable display performance over a long period of time.

15